operated as that. I was afforded a receiving sample that -- receiving a signal.

JUDGE STEINBERG: When you were there, when you did all your various inspections and tests, however many times you were there after April, 1995, it always went Monticello, Pomona to Fort Lee?

THE WITNESS: Correct.

JUDGE STEINBERG: Never went, when you were there, directly from Monticello to Fort Lee, skipping Pomona?

THE WITNESS: That's correct. I never observed an operation from Monticello, directly to Fort Lee, and skipping Pomona.

BY MR. HELMICK:

Q When you did your inspection on May 15, using the signal generator device, do you have any knowledge on whether or not the Fort Lee translator was equipped with filters at that time?

A No, I do not know.

Q Hypothetically, if the Fort Lee translator was equipped with filters when you did your signal generation test, what effect would those filters have on your test?

A It should not have an effect on my testing to any great degree.

Q What do filters do?

A Well, the filters tend to reject, it's attempting

to reject signals that are higher or lower than the signal that you're attempting to receive.

Q Would it be fair to say that it blocks out the adjacent frequencies?

A Right.

Q It makes the reception more sensitive, more honed in on the frequency that you want to receive?

A More honed in but not more sensitive. It makes the resulting signal clearer, but it doesn't make it more sensitive necessarily. In actuality, it's probably less sensitive, because whenever you add a filter, you always put in it reduces the sensitivity by a small amount. So, you're gaining a lot more rejection higher and lower, and you're paying for it in terms of slightly less sensitivity on the main channel that you tune to.

(Pause.)

Q Would the use of filters on the Fort Lee translator make your signal generation test more reliable, less reliable, or have no effect whatsoever on it?

A I would say it would be essentially unchanged.

MR. HELMICK: That's all for me.

JUDGE STEINBERG: Let's go off the record for a minute.

(Discussion held off the record.)

JUDGE STEINBERG: Back on the record. Okay, Mr.

Naftalin, re-cross?

MR. NAFTALIN: Thank you, Your Honor.

RE-CROSS-EXAMINATION

BY MR. NAFTALIN:

Q Just following quickly in time close to the subject you were on, if we assume that the Monticello station was operating at reduced power, significantly reduced power, let's assume, and therefore putting out a degraded signal, wouldn't the Pomona translator have been receiving a degraded signal?

A Depending on the exact nature of things, the receiving system, it's quite possible it would be receiving a degraded signal, yes.

Q So, it's possible that the Pomona translator was receiving a degraded signal from the Monticello station, due to its power reduction, isn't that right?

A Correct.

Q Therefore, isn't it also possible that it would be retransmitting a degraded signal?

A Yes.

JUDGE STEINBERG: Define degraded.

THE WITNESS: There would be noise to it, either an added hiss coming in, or there may be some of the adjacent channel stations would be more apparent.

JUDGE STEINBERG: Okay, so if Pomona is receiving

a degraded signal, whatever filters are on there -- okay, receiving a degraded signal, it's retranslating a degraded signal?

THE WITNESS: Correct, they can't do any better than what it receives.

JUDGE STEINBERG: Even with filters?

THE WITNESS: Well, the filters I saw at Pomona should have accounted for a certain amount of degraded signal from Monticello.

JUDGE STEINBERG: It should have cleaned it up?

THE WITNESS: It should have helped it greatly, yes.

JUDGE STEINBERG: But, you didn't see those until August 2?

THE WITNESS: That's correct.

JUDGE STEINBERG: We're talking about April.

THE WITNESS: May 15.

JUDGE STEINBERG: No, we're talking about April.

THE WITNESS: Oh, I'm sorry, yes, April 13 and 14 is when the degraded signal was there.

JUDGE STEINBERG: If it's retranslating a degraded signal, then anyone listening to it in Fort Lee would be hearing the hissing and the interference from the other channels?

THE WITNESS: Correct.

JUDGE STEINBERG: There wouldn't be a good quality signal that they'd be hearing?

THE WITNESS: In fact, that day it was not a good quality.

MR. NAFTALIN: Thank you. Actually, I'll leave that one there.

BY MR. NAFTALIN:

Q Mr. Loginow, Mr. Aronowitz asked you questions about your view of Mr. Turro's statement, which is Turro Exhibit 1 and Mr. Turro's testimony explaining his view of what happened on May 15, 1995?

A Right.

Q Now, I tried to take a few notes about your comments on it, and I believe, at least would you agree that the sense of your comments were that his explanation was without merit, his explanation was inconsistent with good engineering practice, his explanation was highly problematic and his explanation was not logical whatsoever?

MR. ARONOWITZ: Objection, Your Honor. That's not what he said.

MR. NAFTALIN: I'm asking, is that the sense of what he said.

JUDGE STEINBERG: Yes, that's --

MR. NAFTALIN: I don't want to ask --

MR. ARONOWITZ: Well, about his whole statement,

or any particular individual?

MR. NAFTALIN: About Mr. Turro's explanation of May 15, 1995.

JUDGE STEINBERG: There's a pending objection, so don't answer.

MR. ARONOWITZ: The words that you paraphrased the sense of is not what he was directed on, was not directed to Mr. Turro's entire statement. It was directed to a very limited portion of the statement.

MR. NAFTALIN: Mr. Turro's statement concerning May 15, 1995.

JUDGE STEINBERG: Mr. Turro's explanation of what happened on May 15.

MR. ARONOWITZ: No, Your Honor, that's not what -- that was all with relation to his explanation of the usage of the link. It wasn't with respect to the entire inspection and I'm confident of that.

JUDGE STEINBERG: Why don't you ask the question again?

MR. NAFTALIN: Let me try it again.

JUDGE STEINBERG: I mean, if you need to direct Mr. Loginow's attention to page 22 of Turro Exhibit 1, you can do so. I seem to remember writing something down like that.

MR. NAFTALIN: Okay. Let me try this again.

BY MR. NAFTALIN:

Q Mr. Loginow, in Mr. Turro's statement, Mr. Turro has described the use he was making of WMG499 on May 15, 1995. Mr. Turro testified as to his explanation as to why, when your signal generator put a blanketing signal out on 951 MHz, why you heard the Jukebox Radio audio come across on 103.1 MHz?

A Correct.

Q Now, as for that, would you agree with me that your view on Mr. Turro's explanation of that matter was without merit, inconsistent with good engineering practice, highly problematic, and not logical whatsoever?

A Yes, all those terms related to the use and description of the link and the telemetry controlling the transmitter, and the audio, receiving the audio.

Q Okay, that's fine. Let's work our way through that a little bit. I believe you used the term inconsistent with good engineering practice?

A Okay, yes.

Q What practice would that be, sir?

A Well, the practice that one sees, you know, after being involved in radio, inspecting stations, you know. It's not a definitive --

Q Does that mean based upon your experience? You're not referring to published manuals, the FCC's rules,

anything like that?

A Oh, no, not at all. Right, just experience.

Q This is your experience of being an FCC field engineer?

A Correct.

Q When you say not logical whatsoever, the same answer, based upon what you've seen as an FCC field engineer?

A Well, since it's not so technical to be illogical, only one has to think about it, and that can apply to anyone.

Q This was you thinking about it, as opposed to a professor of electrical engineering, or something like that?

A Yes, still myself thinking about it.

Q Having said all that, is it your testimony that the way Mr. Turro described the use of WMG499 as being technically impossible?

A It's very close to being impossible, yes.

Q Let's go through that for a second. Mr. Turro has testified that there is a microwave transmission path originating in Dumont and aimed towards the Fort Lee translator, is that correct?

A Yes.

Q Do you contend that an individual microwave path can be subdivided into more than one channel?

A There should be no problem with that.

Q That's quite common, isn't it, sir? I mean, it can be done?

A Oh, it can be done. I don't think it's very common.

Q But, I think it's recognized that a single microwave path can have more than one channel on it?

A Correct.

Q In this case, do you agree that Mr. Turro has testified that he had an audio channel and a data channel?

A That's his allegation, yes.

Q That's what his testimony is?

A Yes.

Q That, in and of itself, is not impossible, is it?

A No, not at all.

Q Isn't it also possible that the receiver and the remote control unit at the Fort Lee end of the path was programmable in some way?

A The receiver? That I do not know.

Q Well, it's possible? I know you do not know.

A Oh, it's possible.

Q You never saw the microwave receiver in the Fort Lee electronics room, Fort Lee translator electronics room in operation on May 15, 1995, did you, sir?

A On May 15, no.

Q By the time you actually got into that room and got a good, hard look at it on August 2, 1995, WMG499 had been deactivated, hadn't it, sir?

A That's correct.

Q Now, the microwave path could have been subdivided into a data channel and audio channel, correct?

A Correct.

Q The electronics at the Fort Lee end receiving microwave signals, at least conceivably, technically, could have been programmable, correct?

A Correct.

Q It is certainly possible, as Mr. Turro has testified, that he programmed those units to home in on the audio path in the event that the data path was interrupted, isn't that possible?

A That's possible, but that's the illogical part.

Q I understand, sir, you say that's illogical, but I want to first go to whether it's possible or not?

A Oh, yeah, it's possible.

JUDGE STEINBERG: He's got a receiver and the receiver is programmed. If something happens with the data path, then the audio still goes through or the audio doesn't go through?

MR. NAFTALIN: Yes, what Mr. Turro's testimony is, Your Honor, and it's in the statement, is that if there is

an interruption on the data part of the path, that the receiver there would automatically home in on the audio path.

JUDGE STEINBERG: So, interruption in the data, then the receiver is programmed to capture the audio?

MR. NAFTALIN: Correct, to move away from wherever it was and grab the microwave audio path. That's Mr. Turro's testimony.

JUDGE STEINBERG: I mean, that's theoretically possible?

THE WITNESS: The -- to home in, yes, but it's terribly poor practice, because the path has just been proven to be deficient by the fact that they're losing the telemetry signal.

So, a good engineering practice would not seek out the audio on the very path that has just been proven to be deficient. That doesn't make any sense.

BY MR. NAFTALIN:

Q Well, Mr. Loginow, would you agree that it's certainly possible that the audio path consumed far more of the band width of the microwave path than the data path did? Did that make any sense? Should I try again?

A It makes sense. I mean, I know what you're asking. Sure.

JUDGE STEINBERG: If the band width is like a 12

lane highway, the audio path could occupy ten lanes and the data path could occupy two lanes?

THE WITNESS: Yes.

BY MR. NAFTALIN:

Q Or, maybe a closer analogy, 11 1/2 lanes could be given over to audio and part of one lane could be given over to data, isn't that right?

A Right.

Q Would you agree that a telemetry data path would not take up very much band width?

A That's correct.

Q So, it could be interrupted more easily than a much broader audio path?

A No, not at all.

Q You don't agree?

A Not at all.

Q Let me go at it this way. I believe you testified earlier that your signal generator would have blanketed the microwave path, correct?

A Yes.

Q I'm asking if it's technically possible. I mean, you didn't examine the equipment to know whether it was programmed this way, one way or the other, but is it technically possible that once the whole channel was blanketed so that everything was interrupted, including the

data path, the unit was programmed to hone in and then it would start rebroadcasting the audio, when the audio returned onto the path? Isn't that possible, sir, without being concerned with whether it's logical, isn't that possible?

(Laughter.)

A It's possible, sure. If one were to design a perfectly illogical and poorly designed system, that would be the circuit to use.

Q I understand, Mr. Loginow, you testified earlier, you have personally inspected five FM translators in your career, isn't that right?

A Maximum, yes.

Q Maximum of five. Two of those maximum of five being Mr. Turro's two translators, isn't that right?

A Yes.

Q I believe your October 21, yes, the October 21, 1997 statement, which is Mass Media Bureau Exhibit 16 on the third and last page, or actually carrying over from the second page to the third page, that would be 251 to 252, you say that Mr. Turro's translators are not ordinary, isn't that right?

A In which paragraph?

Q I think it starts --

JUDGE STEINBERG: The bottom of 251, top of 252.

BY MR. NAFTALIN:

Q Start at the bottom of 251 and go to the top of 252.

A Oh, yes, that's correct.

Q Well, you got to really inspect them on August 2, 1995. You observed that these translators were quite unusual?

A That's a very mild way to put it.

Q All right.

A It departs from the theoretical translators that I have always been told existed, and it departs from the other translator stations that I observed.

Q So, when you got a chance to really take a good hard look at the electronics, the Fort Lee translator and the Pomona translator, when they were operating on August 2, 1995, these were, based upon your understanding of translators, these were pretty unusual translators, to say the least?

A Yes, to say the least. To say more, it was probably a mess.

Q Well, okay, Mr. Loginow, is it safe to say that at least 40 percent of all translators you've ever inspected were these two translators?

A Right, that's fair to say.

Q Thank you. Are you a registered engineer, sir?

A No, I'm not.

Q Now, Mr. Aronowitz asked you about a conversation you had with Mr. Turro on August 2, 1995, during the course of your inspections of the Fort Lee translator and Pomona translator?

A Yes.

Q Was it the sense of that conversation that Mr. Turro made you aware that he knew you had put a blanketing signal on the microwave back on May 15, 1995?

A Yes, that seemed to be the impression that I received.

Q Did he say something to you along the lines of, gee, I didn't appreciate that you jammed the microwave up back in May, or something like that?

A No, no.

Q What was --

A It wasn't -- he said, I believe, that he did experience drop outs here and there for a very brief amount of time, like a second or two, but never -- nothing lasting for a few seconds longer and to such a clearly distinctive elimination of the audio.

Q Did you respond to him with something like, well, you know, we're out there in the field and you can't tell when we're going to do something?

A No, I never responded that I was responsible for

that. I said, it's a bad world out there, you never know what radio signals are floating around.

Q Okay, I understand. But, he, at least conveyed the meaning to you that he was aware that something had happened on the microwave channel back on May 15, 1995?

A Yes, he did.

Q The something he was aware of would have been consistent with your testing on May 15, 1995?

A He seemed to have assumed that.

JUDGE STEINBERG: How long on May 15 was the signal interrupted?

THE WITNESS: Probably a total of ten seconds. I did it like in two times, five seconds, and then I took the signal down again and brought it back up.

JUDGE STEINBERG: How long in between the two five seconds?

THE WITNESS: Oh, between the two? Not long, maybe five seconds.

JUDGE STEINBERG: In the course of those five second intervals, that's because you were dialing up the output power on the signal generator?

THE WITNESS: That's correct.

BY MR. NAFTALIN:

Q So, at some beginning part of that five seconds, probably the signal hadn't reached sufficient strength to

blanket the microwave, right?

A True, but I have a quick hand on the dial.

Q So, it was an outside limit of five seconds?

A Right.

JUDGE STEINBERG: Well, is your quick hand five seconds different from somebody's slow hand five seconds? Do you catch what I mean? I mean, if it lasted five seconds, you know, it's going to last five seconds. Five seconds, turning the dial from top to bottom could be a very long time. I mean, I don't understand a quick hand. If you had a quick hand, it wouldn't last five seconds.

THE WITNESS: Actually, it was just a couple of notches on the dial, because it dropped out after two notches on the dial.

JUDGE STEINBERG: Click, click?

THE WITNESS: Right, it was a small amount.

JUDGE STEINBERG: Okay, so you go click and listen for a second or two, then click, and listen for another second or two?

THE WITNESS: Right.

JUDGE STEINBERG: So, it's not a continuous, like my dimmer light?

THE WITNESS: There is a vernier dial on there, also, that I could use, too, that more exactly adjusts the output.

BY MR. NAFTALIN:

Q Now, the blanketing signal you put out on May 15, 1995 with your signal generator, it wouldn't have caused the microwave to lose carrier entirely? It essentially overrode whatever signals were currently there, right?

A That's correct.

Q In your view of what's engineering logic, but what's technical logic in this matter, if the equipment at the Fort Lee translator had been programmed in the event that carrier was entirely lost on the microwave, to home in on an entirely different source, would that have been logical to you, sir?

A Yes, that's much more logical.

Q Now, from the moment you concluded your May 15, 1995 testing up at Fort Lee, to the day you saw or first called Mr. Turro on the telephone on August 2, 1995, did you have any communications with Mr. Turro?

A From August 2? No, I --

Q No, between May 15, 1995 testing and the August 2, 1995 inspection?

A Oh, no, no, I did not.

Q Did you personally cause Mr. Turro or anyone at Jukebox Radio to know of your testing operations on May 15, 1995?

A No, I did not.

Q To your knowledge, did they have some way of acquiring knowledge from the FCC that you performed tests on May 15, 1995?

A Possibly. I'm not going to rule that out.

Q Well, to your knowledge?

A To my knowledge, no, there is no way.

Q I'm not asking about anything other than your knowledge. So, to the best of your knowledge, the only way Mr. Turro could have known about your signal generation test causing blanketing on the microwave channel on May 15, 1995, was because he must have seen the effects of it on May 15, 1995, isn't that right?

A That and a very good guess.

Q Well, what do you mean by a very good guess?

A Well, a good guess that I may have been involved.

Q Okay. Good enough. Moving to a different subject and at the risk of briefly beating Mr. Helmick's dead horse, let's return to April 13, 1995. You've arrived at the fabulous WJUX transmitter. You've been informed that there was a lightening strike and the transmitter is operating at reduced power. Mr. Blabey indicated a power meter that was on the transmitter, is that correct?

A Either a power meter or it was the current of the final stage.

Q Don't transmitters routinely have that sort of,

meters like that?

A Oh, yes.

Q That's a common thing?

A Yes, very common.

Q You said you didn't do any independent testing of your own to determine power output from that transmitter, but did you look at the meter?

A Yes, I looked at the meter.

Q What did the meter say?

A I did not make a numerical reading of the meter.

Q It offered a numerical reading, though, didn't it?

A Oh, yes, it did.

Q But, you don't remember what the numerical reading was, is that it?

A I never took the reading to remember it, in the first place.

Q Well, at the moment you looked at it, there was a numerical reading available to you. You just didn't take note of it, is that right?

A In Ferndale, the transmitter --

Q No, no, April 13, 1995, at the Monticello station transmitter itself?

A Right.

Q You looked at the meter, you could have recorded a numerical reading?

A Yes, I could have.

Q You did not?

A And, I did not.

Q You chose not to?

A Yes.

Q At the moment you were looking at it, you saw a numerical reading, isn't that right?

A I was a little bit far away. I needed my glasses, so I did not see any actual numbers on the dial.

Q If you put on your glasses, sir, would you have seen the numbers?

A Yes, I would have.

Q Did you have equipment with you which could have performed a separate and independent test of the power output?

A Separate and independent, no. What we would have done is take the readings of the current and the voltage of the final stage and look at the efficiency factor from the --

Q How would you have taken those readings?

A Well, the readings would be from the transmitter itself.

Q You would have looked at the meters on the transmitter?

A Yes, but nothing separate and distinct from the

transmitter. We always rely on the meter readings.

Q So, when you were asked earlier whether you independently determined what the operating power was or whether the power was reduced, your normal practice to make such an independent determination would have been to look at the meters?

A That's correct.

Q The meters that are associated with the transmitter?

A The meters on the transmitter, yes.

Q That particular day, you certainly could have done that, sir, couldn't you have?

A Yes.

Q You just chose not to?

A That's correct.

Q Could you give me an explanation of ducting, please?

A Ducting is where a radio signal enters into a cavity and it travels quite more -- very efficiently through the cavity to the other end where the cavity opens up.

Q Would such a cavity be an air conditioning duct, is that what you're thinking of?

A Yes.

Q Is that kind of what you have in your mind?

A Air conditioning. Even the elevator shafts have

served quite well to duct a radio signal.

Q Did you examine the elevator shafts at the Mediterranean Towers, sir?

A I did not, no.

Q Assuming there is an air conditioning system there, I don't know one way or the other, did you examine the ducting internal to the Mediterranean Towers, sir?

A The air -- no, I did not.

JUDGE STEINBERG: Could ducting occur in a stairwell, or is that too big an area?

THE WITNESS: That's probably too irregular. It likes something --

JUDGE STEINBERG: Because it zig zags?

THE WITNESS: Yes, probably something straighter.

BY MR. NAFTALIN:

Q So, when you've rendered your view on ducting, it's surmised?

A Well, and also from past experience.

Q But, not past experience at the Mediterranean Towers?

A Oh, past experience at Mediterranean, no. But, past experience with buildings with elevators. I've been fooled many a time that there was a signal in a basement and it was actually up on the roof.

Q What was the power output of the transmitter when

you observed ducting?

A It was actually quite low.

Q As low as half a watt?

A The effective value on that particular problem was, by the time it reached Lower Manhattan, yes.

Q Have you personally observed a time when a signal was generated on the 27th story of a building at less than one half watt, and ducting carried it clearly, all the way down to the basement?

A Even better yet, I had a low power transmitter across the bay in New York, and it hit the roof and it went all the way down to the basement and we were looking around in the basement for a transmitter, when it wasn't even on that island. The ducting was so good in the elevator shaft.

Q But, that went over water, didn't it, sir?

A That's correct.

Q It did not originate inside an enclosure way up on the roof, did it?

A No, it did not.

JUDGE STEINBERG: What's the significance of the water?

THE WITNESS: Well, there is no high spots on the water and also, the conductivity of the water has a tendency to transmit signals better.

JUDGE STEINBERG: Was it an AM station?

THE WITNESS: No, it's an FM, but the phenomena still exists that FM frequency is just too much of lower extent. Probably it is more material that there's no high buildings in the way, just flat land.

MR. NAFTALIN: That's all I have. Thank you, Mr. Loginow.

JUDGE STEINBERG: Mr. Riley?

MR. RILEY: Just a few, Your Honor.

BY MR. RILEY:

Q Mr. Loginow, in your discussions with Mr. Blabey on April 13, 1995 --

A Yes.

Q -- isn't it true that when you spoke with Mr. Blabey about remote control, your inquiries to Mr. Blabey were, is there remote control equipment at WJUX?

A I believe I said remote control equipment, that's correct.

MR. RILEY: That's what I understood. I believe that's my only question, Your Honor. Just a second.

BY MR. RILEY:

Q I am curious about something, Mr. Loginow. I'm not going to dwell on this. Mr. Helmick asked you to try to establish a time line and you provided him with a large segment of time. I had asked you in an interrogatory the same question, and you had said exact times were not noted.